THE LAW AND COMPUTERS

VOL. I

1983

THE LAW AND COMPUTERS

MATERIALS - 1983

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Volume I

INTRODUCTION

The Law and Computers

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1. Nature of the Course

The focus of the course is on the legal issues associated with the use of computers and thus involves an examination of the intersection of computer technology and the traditional subject areas within the field of law. Hands on experience with computers is neither a formal nor a practical pre-requisite. The reading materials for the course provide an introduction to data processing technology that is intended to be sufficient for most purposes.

Besides its impact upon substantive and procedural law the computer is making its presence felt in the legal environment in such practical applications as legal research and the automation of court functions. As well there is a growing body of literature on topics such as the computer's use in legal decision-making. These topics will not be addressed directly in this course although students may choose, if they wish, to write papers in these areas.

There will be weekly seminar meetings at which the readings for the course will be discussed. Each student, in addition to attending and participating at the seminars, will be expected to undertake a research project.

2. Substantial Research Paper

As a major paper course, a research paper of 25-40 typed pages is required. A list of possible topics will be provided. This list is not meant to be exhaustive however, and students are encouraged to seek approval of other topics in which they have a personal interest.

The paper is due on Tuesday, January 31, 1984.

It must be carefully typed, fully documented and footnoted and be reasonably free of typographical errors as well as those of syntax, grammar and spelling.

It is to be noted that there is a paucity of scholarly Canadian writing on the legal incidents of computer use. While there is a wealth of excellent American material, and students should not hesitate to make use of its analysis, the substantive differences between Canadian and American law make distinctly Canadian articles desirable. It is hoped that the papers in this course will begin to cure the deficiences in the literature.

3. Width of Approach

Students will be expected to acquire an appreciation of the issues raised by the computer in the traditional subject areas of the law. This can only be achieved on the basis of a grasp of the substantive principles of law applicable in each area, and it is anticipated that students will invest the time necessary to acquire this grounding. However it is not to be expected that this familiarity will be sufficient to permit students to provide definitive answers to all the difficult questions associated with the use of computers. Indeed the emerging nature of many of the problems suggests that such solutions may not be

presently available or perceivable. In these circumstances students are expected to develop an understanding of the sources of controversy, the possible means of resolution, and the likely consequences of the proferred solutions.

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Session 1	The Information Revolution [to explore the socio-economic impacts of the information revolution; guest lecture by Prof. C. C. Gotlieb]
Session 2	The Technology and its Industries [an outline of the technology of automation and a survey of the participants in the industry and modes of marketing]
Session 3	Private and Public Law Perspectives [explore concept of information as "property", a "resource", a "commodity"; appropriateness of property-oriented models for "ownership" of information]
Session 4	Industrial Property Perspectives [explore available methods and structures for protection of economic interests in software and data bases; patents, copyright, trade secrets; guest lecture by Brian Edmunds]
Session 5	Information and Data Bases [explore issues of handling of data and legislative restrictions on its use; privacy; freedom of information; trans-border data flow]
Session 6	Contracting for System Usage [explore methods and structures for distribution of hardware and software products; antitrust constraints]
Session 7	Issues in System Contracts [explore issues relating to specifications, acceptance testing, warranties, on-going performance standards and remedies]
Session 8	Special Contracting Situations [explore issues relating to software development, multiple vendors, international transactions]
Session 9	Taxation Issues [review nature of software under taxing statutes, including income tax, provincial sales tax, customs duties, withholding taxes; guest lecture by Judith Woods]
Session 10	Tort Issues [explore applicability of tort principles such as misrepresentation, detrimental reliance, Hedley Byrne principles, products liability, liability for failure to use technology]

Session 11	The Litigation Perspective [explore law of evidence in relation to computer-generated business records and computer-based analyses prepared for litigation; litigation support systems]
Session 12	Criminal Law Perspectives [explore concepts of computer abuse and applicability of criminal sanctions to unauthorized access to systems, taking and copying software and data bases]
Session 13	Commercial Law Perspectives [the challenge of automating paper-based transactions in fields of banking, securities, land registration and trade; guest lecture by Bradley Crawford]
Session 14	Summation

PREFACE

The purpose of these materials is to provide a source book for a discussion of the substantive and procedural legal issues associated with the use of computers.

The material falls into three sections. The first, Sessions I through V, constitutes the necessary background to any study of the public and private law issues raised by the computer. It begins with an introduction to the social and economic impacts of the Information Revolution and is followed by a brief description of the technology and a survey of the participants in the data processing industry. The next session examines on a general plane an issue that recurs throughout the course: whether controls on the use of information are best achieved by the ascription of property rights to information, or whether this is better done by way of equitable proscriptions on the use of information. In Session IV we examine the methods by which the law of intellectual property controls the uses of "information", especially software and data bases, to protect the economic interests of the creators and distributors. The section concludes with an examination of the limits on the handling of data by public law in three areas: privacy; freedom of information; and transborder data flow.

From this general background the materials move to a more particular study of specific legal issues - methods for the distribution of hardware and software, issues in systems contracts and particular contracting situations, taxation issues, and the applicability of tort principles.

The final sessions are designed to explore in detail the intersection of computers and established bodies of law. Session XI explores both the substantive issues associated with the treatment by the law of evidence of computer-generated records, and the procedural aspects of computer use in the litigation process. Criminal law issues are examined next, specifically the ability of the criminal law to cope with unauthorized access to computer systems and the taking and copying of software. Session XIII discusses the challenge of automating paper-based transactions in the fields of banking, securities and trade.

These materials are somewhat bulky. However four factors should be kept in mind in evaluating their length. First, in a course that is concerned with emerging legal issues, more general readings are to be expected than in a more narrowly focused traditional law course. As well, portraying accurately the nature of an unresolved problem frequently requires more extensive material than is needed to describe settled law. Second, in a major paper course, students must have a sound grasp of the basics before undertaking research on their particular topic. It is anticipated that the readings will constitute a helpful beginning to more specific research while providing a basis for seminar discussion. Third, although there is no indication that the problems associated with computer use are less severe in Canada than in the United States, scholarly Canadian writings on the legal incidents of computer use are few. Thus it has been necessary to include more extensive readings than might otherwise have been the case to ensure the materials have the requisite Canadian flavour. Finally, the course is somewhat unique among computer law courses offered at Canadian law schools. Certainly the availability of a prepared set of materials distinguishes it from all other such courses offered in Canada.

Accordingly, these readings represent a first attempt at compiling a comprehensive set of readings that survey the legal issues associated with the use of computers.

The unsettled nature of the subject has made the compilation of materials a particularly difficult undertaking. As of mid-August, 1983 the following major developments were outstanding but anticipated - hopefully in time for class discussion but not in time for inclusion in these volumes:

1. The federal government's inter-departmental report on transborder data flow;

2. Amendments to the Copyright Act;

3. Amendments to the Criminal Code to cope with unauthorized access to information.

D.G.C.
T.G.H.
R.B.A.

Session I: The Information Revolution

A. Introduction

B. The Employment Debate

C. The Necessary Response: An Industrial Strategy?

INTRODUCTORY NOTE

The pundits and soothsayers attach various labels to the computerization of society that is now underway: The Information Revolution; The Fourth Discontinuity; The Coming of Post-Industrial Society; and The Third Wave. Regardless of the particular label chosen, the marriage of computer and communication technologies and the advent of the microprocessor are generating extraordinary changes. Global communications are fostering a new international division of labour in which financial exchanges, information transfers and sales transactions can be undertaken on a worldwide scale, in a real time mode. Microprocessor-controlled equipment is altering the nature of available work by automating the repetitive or predictable tasks, and changing the quantity of work by performing much of it more efficiently than any human could. Simultaneously, terminals, time-sharing, mini-computers and digital networks permit a degree of decentralization that will create new work patterns and life styles.

Not all welcome these developments with unbridled enthusiasm. The commentators may easily be divided into those who welcome and those who fear the microelectronic future. The "Optimists" envision a society in which, work having been eliminated, the human race is free to enjoy a life of leisure. The "Pessimists" ridicule this promised Golden Age, identifying trends which suggest that increased social conflict is the more likely scenario.

Whatever view one takes of the future, it is certain that the dramatic pace of change is unlikely to lessen. Developments in computer and communications will raise many varied and diverse issues. Some of these issues are simply new formulations of old problems: thus, prosecutions of computer fraud and the theft of telecommunications services may demand careful judicial interpretation of existing statutes law, and possibly legislative amendments. Other problems are more complex: whether there are proprietary rights in information, what constitutes inadequate performance under a software development contract, or to what extent trans-border data flow should be permitted. These issues raise novel questions not easily solved by invoking existing statutory or judicial precedents. Moreover social considerations will play a central role in resolving the problems. The legal protection accorded privacy represents a social determination of the degree to which an individual's right to be let alone will be sacrificed in favour of the competing value of freedom of information. The proprietary interests recognized in information implement a social value judgment about rewarding the creators of information at the potential expense of free access.

Absent some concept of the social issues, it is difficult to decide both what the law should take into account and the policy that the law ought to encourage. The readings in this section seek to address this issue by presenting some of the social and economic consequences of the Information Revolution. An overview of the Information Revolution and of recent trends is set out by way of introduction. The materials then focus on a few of the questions which are subject to debate and cannot be decided on technical or legal grounds only: the effect of automation on employment; what ought to be the Canadian policy on high technology; the political implications of the Information Revolution; and the role of the law.

The issues presented by computer technology are so broad that it is not possible to touch upon them all, nor examine any particular issue in depth. The selection of readings has been based on an assessment of what is important, the writings available on that topic, and an appreciation of the issues to be presented elsewhere in these materials. Thus, while the effects of Information Technology on an individual's right to privacy are undoubtedly profound and far-reaching, the subject is not examined here since it is dealt with in Section V.

The intention is not to examine any particular legal issue. Nor is it to provide the most recent forecast about how many circuits will fit on a chip by 1990: a few more zeroes after a number is neither here nor there. What does matter is the trends of development, and the directions in which they are headed. Thus, in approaching the materials readers should bear in mind the following questions:

(i) How is Information Technology affecting the balances of power in society?

(ii) Should the computer industry be regulated?

(iii) Who should control the rate at which technology is introduced? The Government? Management? Industry?

(iv) Given the increasing international competition in Information Technology equipment, is it possible to control its rate of introduction without consigning Canada to an economic backwater?

(v) What is the role of the law, and the agencies of law creation, on the Information Revolution?

(vi) Are courts or the legislature the most appropriate vehicle for the creation of new principles of law applicable to computers?

(vii) Can existing legal principles be applied to Information Technology, or does society require new legal principles and a new legal framework?

(viii) Should the present court system adjudicate disputes concerning Information Technology, or do we require a new "Science Court" either as a separate tribunal or as part of the existing courts to adjudicate these and other science-related issues?

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SESSION II: THE TECHNOLOGY AND ITS INDUSTRIES

A. THE TECHNOLOGY

B. INDUSTRY STRUCTURE AND MODES OF MARKETING

1. Overview

2. The Hardware Sector

3. The Software Sector

INTRODUCTORY NOTE

> "After hearing the evidence in this case the first finding the court is constrained to make is that, in the computer age, lawyers and courts need no longer feel ashamed or even sensitive about the charge often made, that they confuse the issue by resort to legal 'jargon', law Latin or Norman French. By comparison, the misnomers and industrial shorthand of the computer world make the most esoteric legal writing seem as clear and lucid as the Ten Commandments or the Gettysburg Address; and to add to this Babel, the experts in the computer field, while using exactly the same words, uniformly disagree as to precisely what they mean."

Honeywell, Inc. v. Lithonia Lighting,

317 F. Supp. 406 (N.D.Ga. 1980)

per Edenfield J. at 408

The materials for this session provide an introduction to the technology of computers and the structure of the data processing industry. If the law is to address computer-related problems in any meaningful way, the lawyer must understand the technology well enough to communicate with the technical representatives. Similarly, knowledge of the industry participants, their market shares, and development trends is essential if lawyers are to adequately advise clients on issues as diverse as the reasonableness of proposed contract terms or the antitrust implications of specified behaviour.

Section A seeks to present the operation of the computer and to describe the hardware and software components of a data processing system. The intention is to provide a comprehensive picture without becoming bogged down in technical detail. Thus there is less emphasis on physical principles of operation and more on evaluating the advantages and disadvantages of different items of hardware that perform the same function. It is hoped that at the same time as readers garner an understanding of the operation of data processing systems, they will learn to appreciate the limits of the technology.

The second part describes the industry structure, the participants and the modes of marketing. While numbers are set out, less emphasis should be placed on these than on the relationships and trends the figures reveal. The data processing industry is undergoing continual and dramatic changes implying that figures are of little value. For example, ten years ago sales of key-punch machines were booming as demand outstripped supply. The sales statistics would have indicated a growth industry with a rosy future. Yet even as the sales continued to increase, technology had rendered the key-punch machine obsolete. Distributed processing and data entry equipment promised new solutions to problems that did not rely on computer

cards. However, since full scale implementation of that technology was several years away, date processing managers continued to order the key punch realizing all the while they were purchasing obsolete equipment. The extent to which the same is true of other parts of the computer industry will not emerge from the most up-to-date sales figures, but rather from coupling an appreciation of the different technologies with a knowledge of industry trends.

Session III: Information as Property: Private and Public Law Perspectives

A. The Nature of Information

B. Proprietary Rights in Information

C. Equitable Obligations of Good Faith

D. The Broad Perspective

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INTRODUCTORY NOTE

The problems to be addressed in coming weeks involve, to a large extent, the intangible nature of Information. Computer programs and data can be recorded on paper, magnetic tape, or some other medium. Yet it is the records which have a physical existence, not the Information itself. An unlimited number of copies of these records can be made, creating infinite multiples of the Information, often without altering the original in any way.

The abstract nature of Information raises specific questions concerning the regulation of the acquisition and dissemination of data. More generally, it raises the extraordinarily complex question of whether property concepts are appropriate tools for dealing with the wide variety of interests which the law must take into account. Consider the "interests" arising in the following areas, and whether these are properly controlled by the application of rules based on the recognition of a property right in the Information:

(a) Industrial Property: The concepts developed for the protection of economic interests lead one naturally to speak of ownership of the intangible. However what is really involved is the right to commercial exploitation.

(b) Privacy: In the computer age, a right to privacy must include a right to control the dissemination of personal information about oneself, and the uses to which that information is put. Can these individual interests properly be described as proprietary, and is it helpful to do so?

(c) Criminal Law: The definition of theft in s.283(1)(a) of the Criminal Code might be made applicable to the copying of Information by a determination that the owner is deprived of the economic value of the Information derived from its exclusivity. Is the interest thus recognized proprietary?

(d) Freedom of Information: Is a right to access to the information in government files a property right? If so, how does a general right to access in the citizenry co-exist with the rights of private firms to control the disclosure of Information that they have revealed to the government, say in the course of licencing or trade applications.

The readings for this week examine whether the various and sometimes conflicting interests that arise in Information can be accommodated within property oriented models of ownership. Various questions arise. Should the formal ordering of Information be accomplished by the assignment of property rights? In the alternative, would a better regime be one that speaks in terms of permitted and prescribed uses, based on equitable obligations? Or should a functional approach be adopted, utilizing whichever of the proprietary or the equitable solutions provides the most appropriate response?

Which of these techniques is appropriate will depend upon their respective abilities to provide answers to the challenges presented by the

Information Age. Hammond, in the article included here suggests there are two key challenges. The first relates to the ability of society to protect its basic political and human values from unwise application of the new knowledge. Two particular representations of this issue will be examined in detail in Session V when Privacy and Freedom of Information are discussed.

The second challenge involves the ability of legal and business communities to develop new structures that will ensure both the creation and the effective utilization of new information. This issue is discussed in the context of the techniques provided by the law of Industrial Property to protect economic interests in data and software in Session IV.

The readings here examine these two questions not in the course of focusing on a particular problem but rather while discussing what is the most appropriate model upon which to base the legal rules controlling the acquisition and dissemination of Information. When the issue is presented in this manner, it is obvious that the response will depend in part on how one regards Information. Is it a commodity, capable of being bought and sold in the market-place? Or is it rather a resource, whose uses must be subject to overriding considerations of national importance.

The first section of the materials examines this issue very briefly, presenting different descriptions and concepts of Information. The second part analyses the notion of "property rights". Two contrasting approaches are set out. The excerpt from Posner describes the economic analysis of property. It is a more functional approach than that provided by Becker, and more appropriate to an attitude that views Information as a commodity. American jurisdictions have favoured a proprietary approach to control of confidential information. In contradistinction to this, British Commonwealth jurisdictions have addressed questions of the disclosure of confidential communications on the basis of an equitable obligation of good faith.

The third section briefly examines breach of confidence, one formulation used by the courts to enforce equitable obligations, thereby defining the legal limits to the permitted uses of Information. Is the concept of equitable obligations really only a disguised form of property interest, and vice-versa? The last item in the reading, "Quantum Physics, Econometric Models and Property Rights to Information" by R.G. Hammond conveys other aspects of the equitable approach to the regulation of information, and as well as places Freedom of Information and Criminal Law questions into the same perspective. The article provides an excellent summary of the difficulty of utilizing conventional proprietary notions to achieve the formal ordering of information.

None of the material reproduced in this section deals specifically with computer software or data. However, the immediate concerns of the data processing industry are still present, if in a somewhat nascent form. In reading these selections, students may consider the following questions:

(i) Do proprietary approaches focus too much attention on the creation of information, and too little on its effective utilization?

(ii) To what extent is it significant that recognition of interests outside the Industrial Property system may lead to an avoidance of legal institutions designed to promote disclosure?

(iii) Need one be concerned that the recognition of property rights in information may lead to a new form of economic subjugation, in which new Information Brokers come to occupy positions, analogous to those held by the landholders of the middle ages? If the answer is yes, what importance should be attached to the interests of the developing nations in access to information?

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